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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|-------------------------|------------------|
| 10/709,753 | 05/26/2004 | Douglas Zhu | 81094665 / FMC 1698 PUS | 3752 |

28395 7590 02/02/2005
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EXAMINER

FASTOVSKY, LEONID M

ART UNIT PAPER NUMBER

3742

DATE MAILED: 02/02/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|---------------------------------------|-----------------------------------|--|
| Office Action Summary | Application No. 10/709,753 | Applicant(s) ZHU ET AL. | |
| | Examiner Leonid M Fastovsky | Art Unit 3742 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10, 13-20 is/are rejected.
- 7) ☒ Claim(s) 9, 11 and 12 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 May 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-4, 6-8, 10, 13 and 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mixon in view of Vanderslice, Jr. et al.

Mixon teaches a battery charger apparatus and a method of charging the battery comprising determining a vehicle "key-off" condition such as extended stops in order to determine the battery's state-of-charge (SOC) (col. 7, lines 53-60). Mixon also teaches a key-off sensor 16K, timer means 200T with suspend mode of 4 hours (col. 9, lines 25-30), and a controller 200. Further, Mixon teaches a signal indicating that the engine is off (col. 9, lines 13-15) and a timer means in order to place the controller in the suspend mode in order to indicate a valid state of the charge (SOC) (col. 8, lines 45-52, col. 9, lines 25-30). However, Mixon does not teach heating of the battery.

Vanderslice teaches a battery heating system and a method of controlling the battery heating system comprising a heater R for heating the battery 10, the battery temperature sensor 14, and a controller 16 enabling energy flow from the battery 10 to the heater R to heat the battery. It would have been obvious to one having ordinary skill in the art to place Mixon's controller 200 in an active mode and modify Mixon's invention

to include a battery heating system as taught by Vanderslice in order to heat the battery in a vehicle.

As for claims 7-8 and 19-20, Mixon teaches the battery SOC (Fig. 9-10, col. 9, lines 17-45) and the SOC voltage settling during key-off condition, and also provides a stable battery where the voltage shift may occur by compensating for the shift by sensing means 10T and by estimating parasitic or key-off load by monitoring battery surface charge drain with logic (col. 9, lines 17-45).

3. Claims 5 and 14-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mixon in view of Vanderslice and further in view of Gollomp et al (6,424,157).

Mixon in view of Vanderslice teaches substantially the claimed invention, but does not teach the ambient temperature and a sleep mode.

Gollomp teaches a system and a method for monitoring a vehicle battery comprising an ambient temperature sensor 130, a sleep mode (Fig. 3), and a battery state of charge (SOC) (col. 14, lines 20-67, col. 15, lines 1-67, col. 16, lines 1-36). It would have been obvious to one having ordinary skill in the art to modify the invention of Mixon in view of Vanderslice to include an ambient temperature sensor to determine the energy to start the engine (col. 8, lines 46-59), a sleep mode as taught by Gollomp in order to provide real time conditions regarding potential loss of capability and the need for corrective action (col. 14, lines 21-67) and determine the battery SOC by computer (col. 9, lines 30-67, col. 10-, lines 1-5).

Allowable Subject Matter

4. Claims 9 and 12 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

5. Applicant's arguments filed 10/26/04 have been fully considered but they are not persuasive. Mixon does teach determining the "key-off" condition (col. 7, lines 53-60). More than that, determining of key-off condition can be easily accomplished by any person skilled in the art just by observation of the battery. As for motivation to combine, the motivation is appropriate because the prior art is reasonably pertinent to the particular problem of monitoring the battery condition in accordance with MPEP 2141.01(a).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M Fastovsky whose telephone number is 571-272-4778. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



Art Unit: 3742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Leonid M Fastovsky
Examiner
Art Unit 3742

lmf

1/28/05



1/31/05